UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/787,182	02/27/2004	Kazuo Sugimoto	249549US90	4597

22850 7590 05/18/2009

OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, P.C.
1940 DUKE STREET
ALEXANDRIA, VA 22314

EXAMINER	
ANYIKIRE, CHIKAODILI E	

ART UNIT	PAPER NUMBER
2621	

NOTIFICATION DATE	DELIVERY MODE
05/18/2009	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patentdocket@oblon.com
oblonpat@oblon.com
jgardner@oblon.com

Office Action Summary	Application No.	Applicant(s)	
	10/787,182	SUGIMOTO ET AL.	
	Examiner	Art Unit	
	CHIKAODILI E. ANYIKIRE	2621	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03 March 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-14* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-14* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *27 February 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. This application is responsive to application number (10787182) filed on February 27, 2004. Claims 1-14 are pending and have been examined.

Response to Arguments

2. Applicant's arguments filed March 3, 2009 have been fully considered but they are not persuasive.

The applicant argues that pattern matching process does not correspond to block based system (page 13 lines 1-3). The examiner respectfully disagrees. Zakhor explains that the input image is divided into blocks. Pattern matching is acknowledged as a block based system contrary to the arguments by applicant (column 5 lines 30-40).

The applicant argues that Zakhor does not teach generating a compression code corresponding to each size of the blocks (page 13 lines 4-6). The examiner respectfully disagrees. Zakhor explains the patterns related to the different block sizes and finds the optimal pattern that corresponds to the lowest bit rate (col 4 lines 50-58 and col 5 lines 1-28).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

4. Claims 1- 4, 6-11, and 13-14 rejected under 35 U.S.C. 103(a) as being unpatentable over Zakhor et al (US 5,699,121, hereafter Zakhor) in view of Clausen et al (US 6,775,415, hereafter Clausen).

As per **claim 1**, Zakhor disclose image encoding apparatus (Fig 1 element 20) comprising:

conversion (Fig 1 element 60) means for converting coding target blocks within a coding target image into conversion information (col 4 lines 50-61);

quantization (Fig 1 element 100) means for quantizing the conversion information and generating quantized conversion information (col 6 lines 26-27); and

encoding (Fig 1 element 100) means for generating compression data by encoding the quantized conversion information based on the size of the blocks, and for generating a compression code used to generate the compression data (col 4 lines 40-58 and col 6 lines 26-37),

wherein the encoding means encodes the quantized conversion information based on a plurality of sizes of the blocks, and generates the compression code corresponding

to each size of the blocks (col 4 lines 40-58 and col 6 lines 26-37; Zakhor discloses the present takes in an NxN input and codes the signal, which shows that there is a plurality of block sizes), and

the block size and compression code corresponding to the lowest bit rate (col 4 lines 50-58 and col 5 lines 1-28; Zakhor discloses how using the pattern matcher is advantageous for low bit rates and that the closest pattern is found which corresponds to the lowest bit rate).

However, Zakhor does not explicitly teach the block size and compression code corresponding to the lowest bit rate is included in header information.

In the same field of endeavor, Clausen discloses the block size and compression code corresponding to the lowest bit rate is included in header information (column 15 lines 4-11; Clausen teaches with the combination of the header and transmission information being the header of the image data having information relating to the block size and compression code).

Therefore, it would have been obvious for one having skill in the art at the time of the invention to modify the invention of Zakhor to include well known use of header information. The advantages being efficiently providing information in order to transmit video signals at low bitrates.

As per **claim 2**, Zakhor discloses an image encoding apparatus according to claim 1, further comprising:

dictionary storage (Fig 1 element 80) means for storing a plurality of bases (col 4 lines 59-67),

wherein the conversion means converts the coding target image into the conversion information including index information for specifying a basis used for decomposition of the coding target image among the plurality of bases (col 4 line 59 – col 29),

a coefficient by which the basis specified by the index information is multiplied (col 5 lines 14-18), and

positional information for specifying a position where a pattern made by multiplying the basis specified by the index information by the coefficient is restored, based on a predetermined conversion rule (col 5 lines 16-18),

the encoding means generates the compression data including the compression codes based on a predetermined compression encoding rule (col 6 lines 26-27), and

for each block size, the encoding means executes processing in which the encoding means divides the coding target image into a plurality of blocks, extracts, for each of the plurality of blocks, the quantized conversion information the positional information of which is included in the block (col 5 lines 16-18 and col 6 lines 26-37), encodes, for each of the plurality of blocks, a flag for specifying existence of the quantized conversion information the positional information of which is included in the block (col 5 lines 16-18 and col 6 lines 26-37; the atom described in the art is the flag), encodes, for each of the plurality of blocks, the number of items of quantized conversion information each of which includes the positional information included in the block,

converts the positional information of the quantized conversion information into inter-block positional information specifying a relative position in the block in which the positional information is included, and encodes the quantized conversion information (col 5 lines 14-28 and col 6 lines 22-37).

As per **claim 3**, arguments analogous to those presented for claim 1 are applicable to claim 3.

As per **claim 4**, arguments analogous to those presented for claim 2 are applicable to claim 4.

As per **claim 6**, Zakhor discloses an image encoding method to claim 4, wherein, the encoding step further comprises using arithmetic coding as the predetermined compression encoding rule and executing the arithmetic coding using predetermined probabilities stored in a table having different values according to the size of the block (col 6 lines 26-37).

As per **claim 7**, arguments analogous to those presented for claim 1 are applicable to claim 7.

As per **claim 8**, arguments analogous to those presented for claim 1 are applicable to claim 8.

As per **claim 9**, arguments analogous to those presented for claim 2 are applicable to claim 9.

As per **claim 10**, arguments analogous to those presented for claim 1 are applicable to claim 10.

As per **claim 11**, arguments analogous to those presented for claim 9 are applicable to claim 11

Regarding **claim 13**, arguments analogous to those presented for claim 6 are applicable for claim 13.

As per **claim 14**, arguments analogous to those presented for claim 8 are applicable to claim 14.

5. Claims 5 and 12 rejected under 35 U.S.C. 103(a) as being unpatentable over et al (US 5,699,121, hereafter Zakhor) in view of Abe (US 5,805,737).

As per **claim 5**, Zakhor discloses an image encoding method according to claim 4, wherein

the quantization step further includes quantizing the coefficient included in the conversion information to generate the quantized conversion information including a quantized coefficient,(col 6 lines 26-30).

However, Zakhor does not explicitly teach when encoding the quantized conversion information includes extracting a minimum absolute value among absolute values of the quantized coefficients included in a plurality of items of quantized conversion information, determining a code relating to the minimum absolute value in the compression data, converting each of the quantized coefficients into a differential value between the absolute value for each of the quantized coefficients and the minimum absolute value, including the differential values in the compression code after

encoding, and including a positive or negative sign for each of the quantized coefficients in the compression code after encoding.

In the same field of endeavor, Abe discloses when encoding the quantized conversion information includes extracting a minimum absolute value among absolute values of the quantized coefficients included in a plurality of items of quantized conversion information, determining a code relating to the minimum absolute value in the compression data, converting each of the quantized coefficients into a differential value between the absolute value for each of the quantized coefficients and the minimum absolute value, including the differential values in the compression code after encoding, and including a positive or negative sign for each of the quantized coefficients in the compression code after encoding (Col 6 Ln 41-56).

Therefore, it would have been obvious to one having ordinary skill in the art at the time of invention was made to modify invention of with the invention of Abe. The advantage of combining the two inventions would be to provide better coding efficiency.

Regarding claim 12, arguments analogous to those presented for claim 5 are applicable for claim 12.

Conclusion

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CHIKAODILI E. ANYIKIRE whose telephone number is (571)270-1445. The examiner can normally be reached on Monday to Friday, 7:30 am to 5 pm, EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marsha D. Banks-Harold can be reached on (571) 272 - 7905. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Marsha D. Banks-Harold/
Supervisory Patent Examiner, Art Unit 2621
/Chikaodili E. Anyikire/
Patent Examiner AU 2621